

I claim:

1. A method of treating superficial pigmented lesions comprising the following steps:
  - A. Generating pulsed energy from an energy source for treatment of the target tissue or structures;
  - B. Cooling the surface of the skin through delivery of at least one pulse of cryogenic material to the surface of the skin, the at least one pulse of cryogenic material initiated prior to delivery of the pulsed treatment energy to cool deep into the target tissue or structures to protect deep target tissue or structures and terminating the at least one pulse of cryogenic material prior to delivering treatment energy;
  - C. Delivering the pulsed energy to the target tissue or structures with a delivery system; and
  - D. Irradiating the target tissue or structures with the pulsed energy to cause selective thermally mediated treatment of the target tissue or structures such that there is minimal absorption of energy in deeper and adjacent tissue or structures and selective absorption of energy in target tissue or structures, and such that deeper tissue or structures remains at a temperature below the threshold for damage.
2. The method of claim 1 in which the step of cooling the surface of the skin is performed between about 100 and about 1000 msec prior to delivery of the pulsed treatment energy.
3. The method of claim 1 in which the target tissue or structures is a superficial pigmented lesion and the pulsed energy has a wavelength in the range from between about 440 nm to about 520 nm.
4. The method of claim 1 in which the pulsed energy has a pulse duration of 1 msec to 500 msec.

5. The method of claim 1 in which the cooling pulse has a duration of approximately between about 5 msec and about 200 msec.
6. The method of claim 1 in which the delay time between the end of the cooling pulse and beginning of the treatment energy pulse is between approximately 0.1 sec to 5.0 seconds.
7. The method of claim 1 in which the optical energy is delivered at the rate of between about 1 Joule/cm<sup>2</sup> and about 100 Joules /cm<sup>2</sup>.
8. The method of claim 1 in which the target is a superficial vascular lesion.
9. The method of claim 8 in which the pulsed energy has a wavelength of between about 520 and about 600 nm, thereby preferentially selecting absorption of the pulsed energy by blood rather than melanin.
10. A treatment device that includes:
  - a treatment energy source capable of delivering optical energy with wavelength regions that are selectively absorbed by the target lesions and is highly scattered by the skin, the energy delivered in one or more short pulses between about 0.1 to 50.0 msec each thereby limiting penetration of the energy into the skin; and
  - a pulsed cooling system capable of delivering cooling to the skin between about 0.1 to 5.0 second prior to delivery of the treatment energy and capable of terminating cooling between about 0.1 and about 5.0 sec prior to delivery of the treatment energy.

///

11. A method for selective, thermally-mediated treatment of superficial pigmented lesions which includes the following steps:

Delivering cooling to the skin for a period of time between about 10 msec and about 50 msec to limit cooling to deeper structures;

Interrupting cooling of the skin for a period of time between about 100 msec and about 5000 msec; and

Delivering optical energy having one or more wavelengths between about 440 nm and about 520 nm to the target superficial pigmented lesions

12. A method for treatment of selective, thermally-mediated vascular lesions such as Rosacea which includes the following steps:

Delivering cooling to the skin for a period of time between about 5.0 msec and about 200.0 msec;

Interrupting cooling of the skin for a period of time between about 100 msec and about 5000 msec; and

Delivering optical energy having a wavelength between about 520 nm and about 600 nm to the target vascular lesions.

///